Remarks

Claims 1, 3, 4, 9-18 and 20 are pending and are under consideration.

Claims 21 and 22 are added.

Claims 1, 3, 4, 9-18 and 20-22 will be pending upon entry of this amendment.

No claim is allowed.

New claims 21 and 22 are each separately aimed at the specific non-ionic surfactants listed in claim 1.

No new matter is added.

Prior rejections are withdrawn. New rejections apply.

Claims 1, 3, 4, 9-14 and 16-18 are rejected under 35 USC 103(a) as being unpatentable over Fischer, WO 99/07790 in view of Godlewski, et al., U.S. Pat. No. 4,481,322.

Claim 15 is rejected under 35 USC 103(a) as being unpatentable over Fischer in view of Godlewski and further in view of Mehta, et al., U.S. Pat. No. 6,844,389.

Claim 20 is rejected under 35 USC 103(a) as being unpatentable over Fischer in view of Godlewski and further in view of Inoue, et al., U.S. Pat. No. 4,338,228.

Applicants respectfully rebut these rejections.

Present claim 1 reads:

1. A process for the preparation of a polyolefin nanocomposite which comprises melt mixing a mixture of a) a polyolefin, b) a filler and c) a non-ionic surfactant,

wherein the filler is a natural or synthetic phyllosilicate or a mixture of such phyllosilicates or a layered hydroxycarbonate and where the filler is not an organically modified clay and

wherein the non-ionic surfactant is a dimethylsiloxane-ethylene oxide-block copolymer or a poly(methyl methacrylate)-block-poly(oxyethylene) copolymer and

wherein the weight ratio of components c) to b) is from 1:10 to 1:2.

Fischer is cited as teaching a polymer/clay nanocomposite where the clay is dispersed with the aid of a block or graft copolymer. The block or graft copolymer contains first structural units (A) which are compatible with the clay and second structural units (B) which are compatible with the polymeric matrix, page 3, lines 12-23.

The structural units (A) may be formed from ethylene oxide, page 6, line 7.

The structural units (B) may be for instance polymethylmethacrylate or polysiloxanes, paragraph bridging pages 6 and 7.

Godlewski is cited as disclosing mica filled polyolefins comprising polydimethylsiloxane-polyethylene oxide copolymer, col. 9, line 55 and Abstract.

The Examiner maintains that one skilled in the art would have found it obvious to practice the invention of Fischer using polydimethylsiloxane-polyethylene oxide or polymethyl methacrylate-polyethylene oxide based on the disclosure of Fischer and Godlewski. The Examiner states that the skilled person would have been especially motivated to use polydimethylsiloxane-polyethylene oxide as specifically disclosed in Godlewski.

Further, Fischer is cited as teaching a weight ratio of copolymer to clay from 0.05:1 to 6:1, page 7, lines 14-18. The Examiner states that the present weight ratio of surfactant to filler of from 1:10 to 1:2 is obvious as it is within the range of Fischer.

The Examiner further states that disclosure of a polyolefin matrix in Fischer on page 5, lines 12-15 combined with the disclosure of Godlewski makes the use of polyolefin as a matrix especially compelling.

Applicants submit that one skilled in the art would not arrive at the present invention from the combined disclosures of Fischer and Godlewski.

Applicants point out that Fischer teaches that the second structural units (B) of the block or graft copolymer, which are compatible with the polymeric matrix, are specifically chosen depending "on the nature of the polymeric matrix", page 6, lines 29-30. Please note that the list of the matrix polymers, first paragraph of page 5, is identical to the list of the (B) blocks listed in the paragraph bridging pages 6 and 7.

In the Examples of Fischer, polyethylene oxide-polystyrene block copolymers, poly-4-vinylpyridine block-polystyrene block copolymers and polyethyleneimine-polystyrene block copolymers are mixed with a polystyrene matrix. A polyethyenimine-$(octadecyl)_{16}$ block copolymer is mixed with polyethylene.

Thus, Fischer clearly teaches that the (B) blocks of the block or graft copolymer must be very similar or identical to the matrix polymer.

Applicants submit that Fischer teaches away from the present invention, where quite different surfactants, a dimethylsiloxane-ethylene oxide-block copolymer or a poly(methyl methacrylate)-block-poly(oxyethylene) copolymer, are employed in a polyolefin substrate.

Accordingly, Applicants submit that the skilled person would not arrive at the present invention from the combined disclosures of Fischer and Godlewski.

Further, the specific weight ratio of present components c) to b) cannot be arrived at from the combination of Fischer and Godlewski.

In view of the present remarks, Applicants submit that the present 35 USC 103(a) rejections are addressed and are overcome.

The Examiner is kindly requested to reconsider and to withdraw the 35 USC 103(a) rejections.

Claims 1, 3, 4, 9-18 and 20 are provisionally rejected on the ground of nonstatutory obviousness type double patenting as being unpatentable over claims 1-18, 20 and 21 of copending app. No. 10/547,264.

Applicants will file any appropriate terminal disclaimer upon the resolution of all other matters.

Notwithstanding any obviousness type double patenting rejections, Applicants submit that the present claims are in condition for allowance.

Respectfully submitted,

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Attachment: Petition for a 1 month extension of time